

ABSTRACT OF THE DISCLOSURE

An on-board fuel cell system adapted to be installed on a motor vehicle includes a main passage connecting a hydrogen-gas storage device with an inlet of a fuel cell, a circulation passage that connects an outlet of the fuel cell with a first point in the main passage, a pump disposed in the circulation passage, and a bypass passage that connects a second point between the outlet of the storage device and the first point, with a third point located in the circulation passage between the outlet of the fuel cell and the pump. During a normal operation condition of the system, the hydrogen gas flows from the storage device to the fuel cell through the main passage, and hydrogen gas discharged from the fuel cell returns to the main passage through the circulation passage. When the pressure of the hydrogen gas is lower than a reference pressure, the pump operates to draw the hydrogen gas out of the storage device and feed the hydrogen gas from the main passage to the circulation passage through the bypass passage, and to the fuel cell through the main passage.